



Weather and Climate

Western Arctic Parklands Summer 2013 Weather Summary

Was summer 2013 normal for Kotzebue?

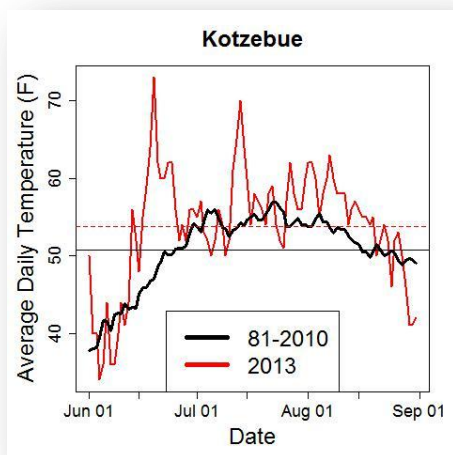
It was a warm summer...3.1° F warmer than normal. Mid-June and mid-July were particularly warm, with record highs on 6/13, 6/19, and 7/13. June rainfall was 157% of normal, July precipitation was near normal, and August was much drier than normal in Kotzebue.

Summer 2013
Record High
Temperatures
6/13, 74° F
6/19*, 85° F
7/13, 78° F

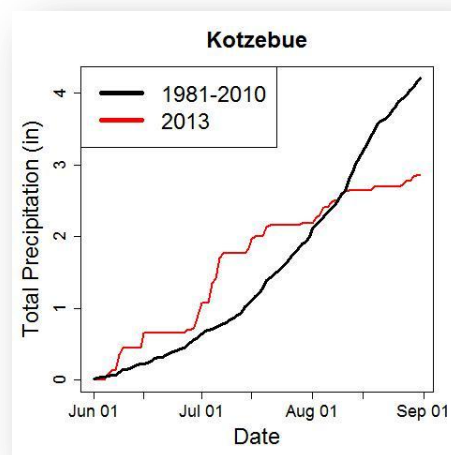
*Tied for all-time
high
temperature
(7/5/1958 and
6/22/1991)

Like most of Alaska, June was a warm month in Kotzebue. The average monthly temperature was 5.1°F warmer than normal, primarily attributed to warm temperatures during the second half of the month after the ice melted in Kotzebue Sound. Daily high temperature records were set on 6/13 (73° F), and 6/19 (85° F). The high temperature on 6/19 ties the all-time record since measurements began in 1898. Overall, 2013 was the 4th warmest June on record. Most of the state experienced dry conditions in June, but Kotzebue, Nome and Barrow all received above normal precipitation. June precipitation was 157% of normal in Kotzebue, mostly due to 0.45 inches of rainfall from June 5-9. July was warmer and drier than normal. The average monthly temperature was 56.5° F, 1.9 degrees warmer than normal. There was 1.28 inches of total rainfall for the month, which is 88% of normal. Temperatures remained warmer than normal in August. The average temperature in August was 54.0° F compared to a normal average temperature of 51.7° F. Kotzebue reported rainfall on 15 days in August, but total precipitation was well below normal. Only 0.67 inches of rainfall was reported for the month, which is 31% of normal.

Kotzebue – Average Air Temperatures



Kotzebue – Cumulative Precipitation



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Kotzebue Weather Records:
 Climate Normal Period 1981 – 2010
 Climate Record Period 1897 – 2013

Temperature

Summer 2013	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
June	50.8	45.7	+5.1	85* / June 19	29 / June 5
July	56.5	54.6	+1.9	78 / June 13	45 / June 10
August	54.0	51.7	+2.3	69 / Aug 7	34 / Aug 31

Summer Season Temperature Departure from Normal: +3.1°F

*Tied for all-time high (7/5/1958 and 6/22/1991)

Precipitation

Summer 2013	Total Monthly Precip in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24-hr total in. / Date	# Days with ≥ 0.01 in. Water
June	0.91	0.58	+0.33	0.32 / June 8-9	8
July	1.28	1.45	-0.17	0.33 / July 6-7	11
August	0.67	2.18	-1.51	0.11 / Aug 4	15

Summer Season Precipitation Departure from Normal: -1.35 inches

We now have additional NPS climate stations in Cape Krusenstern, Noatak, and Kobuk Valley that complement existing National Weather Service stations at Kotzebue and along the Kobuk River to the south. The new NPS stations will provide critical data on high elevation sites in the Arctic and will help characterize the climate gradients and patterns affecting resources in the Western Arctic parklands.



Locations of NPS RAWs stations in WEAR. Salmon River was installed in Kobuk Valley National Park in 2013.

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Arctic Network RAWS weather summaries – Summer 2013:

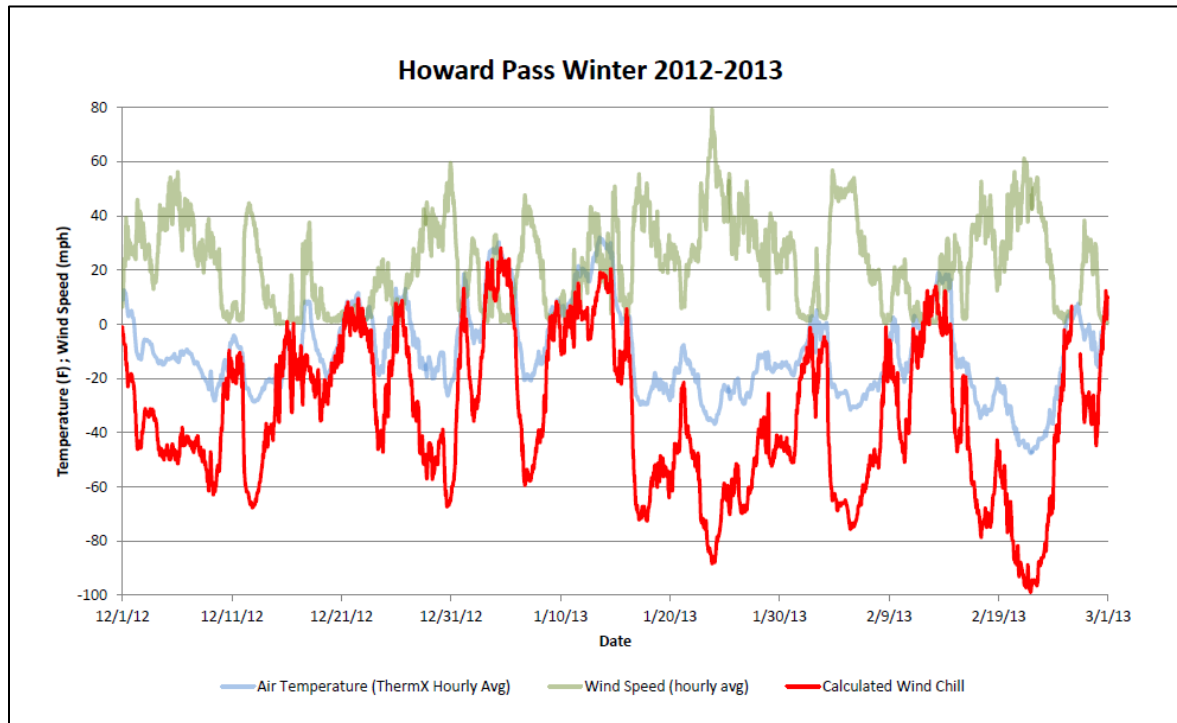
		Summer 2013							Peak
		Elev.	Average Temp (°F)			Precipitation (inches)*			Wind
	Site	Ft.	June	July	Aug	June	July	Aug	(mph)
CAKR	Mt. Noak	809	54.0	52.2	--	--	--	--	--
	Tahinichok	966	52.5	51.2	48.4	--	1.13	1.68	33
NOAT	Asik	1329	53.6	51.3	48.2	2.06	3.04	1.86	38
	Kelly	382	57.8	56.4	51.6	2.2	2.3	3.3	26
	Sisiak	1823	52.3	50.9	45.5	--	1.44	3.45	32
	Noatak	985	56.5	55.9	47.9	1.82	0.9	1.73	41
	Kaluich	2486	51.0	49.7	44.0	1.02	1.77	2.18	59
	Imelyak	3569	48.3	46.2	42.6	1.33	3.09	3.69	44
	Howard Pass	2100	51.8	51.6	44.3	1.39	0.71	1.70	56
KOVA	Kavet Creek	235	62.7	60.1	53.3	1.04	1.79	2.67	26

* Preliminary data subject to revision - precipitation gages are not shielded and therefore rainfall totals may be lower than actual amounts.

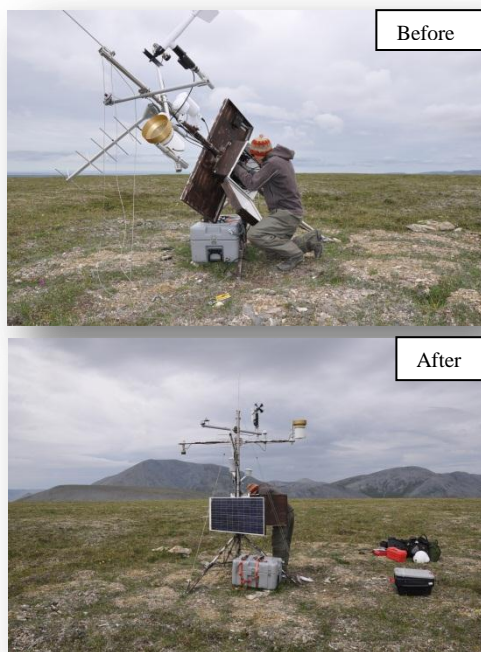
Interesting notes from RAWS stations

- In July 2013, the Salmon River station was installed 60 miles northwest of Ambler at an elevation of 2,000 feet. Near real-time data are available at Mesowest (see links below).
- At Howard Pass (see cover photos), winter temperatures were as low as -48° F in February and wind gusts as high as 84 mph in January. The minimum wind chill for February was -101° F on February 21. The average wind chill for February was -39.5° F. (See time series graph on next page)
- Extreme weather conditions continue to provide challenges for remote stations. Heavy rime ice bent the mast at Mt. Noak in winter 2012-2013. Amazingly, the station was still collecting data and transmitting hourly. The critical air temperature and soil temperature records are intact, while other sensors were compromised due to the position of the mast. The mast was replaced in July 2013. (see photos next page)
- Both Howard Pass and Kaluich had wind gusts higher than 55 mph in July. On average, Howard Pass was the windiest RAWS site in WEAR with a mean summer wind speed of 14.3 mph.

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Air Temperature (blue), wind speed (green), and wind chill (red) at Howard Pass December 1, 2012 – February 28, 2013.



Mt. Noak climate station was damaged due to rime ice (top). Despite the damage, the station was transmitting and all sensors were functioning. The mast was replaced in July 2013 (bottom).

Connecting Further

Previous weather summaries and other climate monitoring documents on the [Arctic Network web portal](#)

Access near real-time data from [Western Regional Climate Center](#) and [MesoWest](#)

Check out the Oct-Nov-Dec weather outlook from the [NOAA Climate Prediction Center](#)

Statewide summary of weather highlights in the latest [Alaska Climate Dispatch](#) from the Alaska Center for Climate Assessment and Policy

[Maps](#) of projected temperature and precipitation changes for the WEAR parks.

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Please Note: The summarized data are preliminary and have not undergone final quality control. Therefore, these data are subject to revision.